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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,326	08/29/2003	Anand A. Kekre	VRT0098US	1638
60429	7590	10/19/2006	EXAMINER PHAM, KHANH B	
CSA LLP 4807 SPICEWOOD SPRINGS RD. BLDG. 4, SUITE 201 AUSTIN, TX 78759			ART UNIT 2166	PAPER NUMBER

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/652,326	Applicant(s) KEKRE, ANAND A.	
	Examiner Khanh B. Pham	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-8,10,12-15,17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-8,10,12-15,17 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on August 21, 2006. These drawings are acceptable subject to correction of the informalities discussed below.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **Fig. 1 does not include reference sign 114 mentioned in [0008] of the specification.** Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 3, 5-8, 10, 12-15, 17, 19-21 are rejected** under 35 U.S.C. 102(e) as being anticipated by Teloh et al. (US 2003/0014432 A1), hereinafter referred to as “Teloh”.

As per claim 1, Teloh teaches a method of performing cascaded replication (See Fig. 9) comprising:

- “asynchronously replicating data to be written to a data volume of a first node to a data volume of a second node” at page 6, [0058] and Fig. 9;
- “and replicating data to be written to said data volume of said second node to a data volume of a third node” at page 6, [0059] and Fig. 9,
- “wherein said replicating data to be written to said data volume of said second node comprises periodically replicating said data to be written to said data volume of said second node to said data volume of said third node” at page 2, [0018] and page 4, [0048].

As per claim 3, Teloh teaches a method of performing cascaded replication comprising:

- “asynchronously replicating data to be written to a data volume of a first node to a data volume of a second node” at page 6, [0058] and Fig. 9;
- “replicating data to be written to said data volume of said second node to a data volume of a third node” at page 6, [0059] and Fig. 9;
- “wherein “said replicating data to be written to said data volume of said second node comprises asynchronously replicating said data to be written to said data volume of said second node to said data volume of said third node” at page 6, [0058] - [0059].

As per claim 5, Teloh teaches the method of claim 3, wherein, “said asynchronously replicating data to be written to said data volume of said first node comprises, asynchronously replicating data to be written to a data volume of a primary node to a data volume of an intermediate node; and said asynchronously replicating data to be written to said data volume of said second node comprises, asynchronously replicating data to be written to said data volume of said intermediate node to a data volume of a secondary node” at page 6, [0058] - [0059] and Fig. 9.

As per claim 6, Teloh teaches the method of claim 5, wherein “said asynchronously replicating data to be written to said data volume of said intermediate node comprises asynchronously replicating data to be written to said data volume of said intermediate node to a data volume of each of a plurality of secondary nodes” at page 6, [0058] - [0059] and Fig. 9.

As per claim 7, Teloh teaches the method of claim 3, wherein, "said asynchronously replicating data to be written to said data volume of said first node comprises asynchronously replicating data to be written to said data volume of said first node to said data volume of said second node using a first data link coupled between said first node and said second node; said asynchronously replicating data to be written to said data volume of said second node comprises asynchronously replicating data to be written to said data volume of said second node to said data volume of said third node using a second data link coupled between said second node and said third node; and said first data link has a higher bandwidth than said second data link" at page 6, [0058] - [0059] and Fig. 9.

Claims 8, 10, 12-14 recite an apparatus configured to perform the method as in claims 1, 3, 5-7, and therefore rejected by the same reasons.

Claims 15, 17, 19-21 recite a machine readable medium for performing the method as in claims 1-7, and therefore rejected by the same reasons.

Response to Arguments

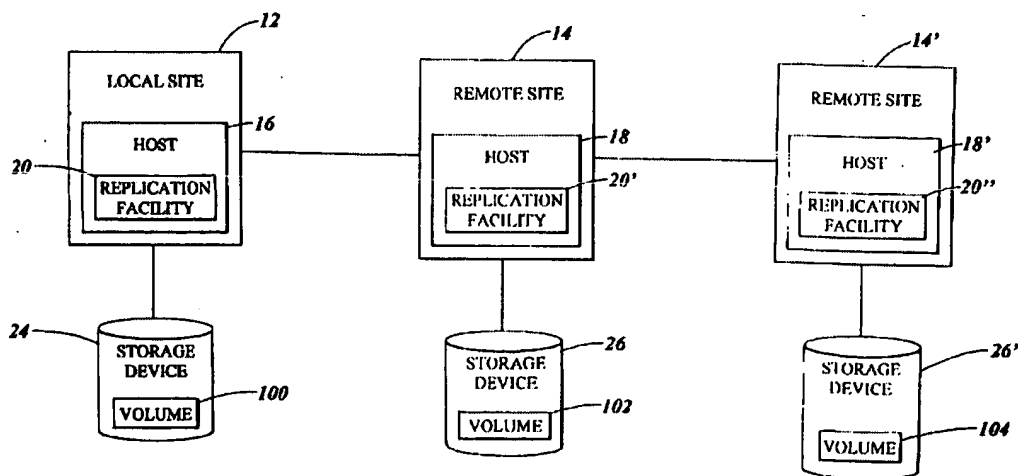
5. Applicant's arguments filed August 21, 2006 have been fully considered but they are not persuasive. The examiner respectfully traverses applicant's arguments.

Regarding claim 1, applicant argued that Teloh does not describe periodic replication to a third node. On the contrary, Teloh teaches at [0018] that "the first remote location replicates the data to the second remote location in an asynchronous manner."

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Applicant's specification at page 8, [0030] defines: "in periodic replication a side or node (e.g., a secondary node) is periodically updated with changes that have been written (e.g., to an intermediary node) over a period of time". This is similar to Teloh's asynchronous replica, which writes data to the intermediary node first, then stores remote data writes in queues for transmission to and updating the secondary node at a later time (page 4, [0048]).

Regarding claim 3, applicant argued that Teloh does not teach asynchronous replication to the second node and asynchronous replication to the third node. On the contrary, Teloh teaches the claimed invention at Fig. 9, wherein each of the replication facility "supports **synchronous** data replication and **asynchronous** data replication" at [0042]. In one embodiment, Teloh teaches the replication of data from storage device 24 to 26 is **synchronous** and from 26 to 26' is **asynchronous** (page 2, [0018]). In another embodiment at [0058], Teloh replicates data from storage 24 to 26 **asynchronously**, and therefore anticipates the claimed invention.

**FIG. 9**

In light of the foregoing arguments, the 35 U.S.C 102 rejection is hereby sustained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (571) 272-4116. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Khanh B. Pham
Examiner
Art Unit 2166

October 4, 2006

A handwritten signature in black ink, appearing to read 'Kpham', with a long horizontal flourish underneath.